Series E12

- *Servo or face mount (1.2" diameter)*
- *Up to 1024 PPR with optional marker pulse*
- *Rugged all-metal housing*
- *Shielded cable standard*

APPLICATION/INDUSTRY

The Series E12 ultraminiature incremental optical encoder is packaged for commercial and lighter-duty industrial applications.

Typical Applications

- Industrial equipment
- Assembly machinery
- Phototypesetters and printers
- Robotics
- Medical diagnostic equipment
- Motor-mounted feedback
- Computer peripherals

DESCRIPTION

The E12 is standard Size 12 (1.2"diameter), servo or face-mount,with a rugged metal housing.It includes precision bearings, an O-ring housing seal, and a rugged 1/8"diameter stainless steel shaft. Series E12 incorporates the latest in micro- electronic packaging, LED light sources, and matched sensors. Outputs are designed to be compatible with most 5V TTL circuits with options for higher voltage 12 and 15 VDC. Shielded cable is standard.

FEATURES AND BENEFITS

Mechanical and Environmental Features

- Durable metal housing
- O-ring housing seal
- Rugged 1/8"diameter stainless steel shaft
- Up to 5000 RPM
- 0 to 70 °C operating temperature

Electrical Features

- Up to 1024 pulses per revolution including an optional marker pulse
- Higher electronic operating speed up to 100 kHz
- LED light source and matched sensor
- Choice of 5,12,or 15 VDC units

SPECIFICATIONS

STANDARD OPERATING CHARACTERISTICS

Code: Incremental
Resolution: 100 to 1024 PPR (pulses/ revolution)
Format: Two channel quadrature (AB)with optional Index (Z) outputs
Phase Sense : A leads B for CW shaft rotation as viewed from the shaft end of the encoder
Accuracy: ±3 x (360 ° ÷PPR)or ± 2.5 arc-min worst case pulse to any other pulse, whichever is less
Quadrature Phasing 90 ° ± 36 ° electrical
Symmetry: 180 ° ± 18 ° electrical
Index: 90 ° ± 25 ° (gated with A and B high)
Waveforms: Squarewave with rise and fall times less than 1 microsecond into a load capacitance of 1000 pf

ELECTRICAL

Input Power: 5 VDC ± 5% at 80 mA max.; 12 or 15 VDC ± 10% at 80 mA max.; not including output loads
Outputs: 7272 line driver (or equivalent), 40 mA sink and source
Frequency Response: 100 kHz min.

Electrical Connections

Function (If Used)	Wire Color Code
Supply	Red
Common	Black
Signal A	White
Signal B	Green
Signal Z	Orange
Floating	Shield

MECHANICAL

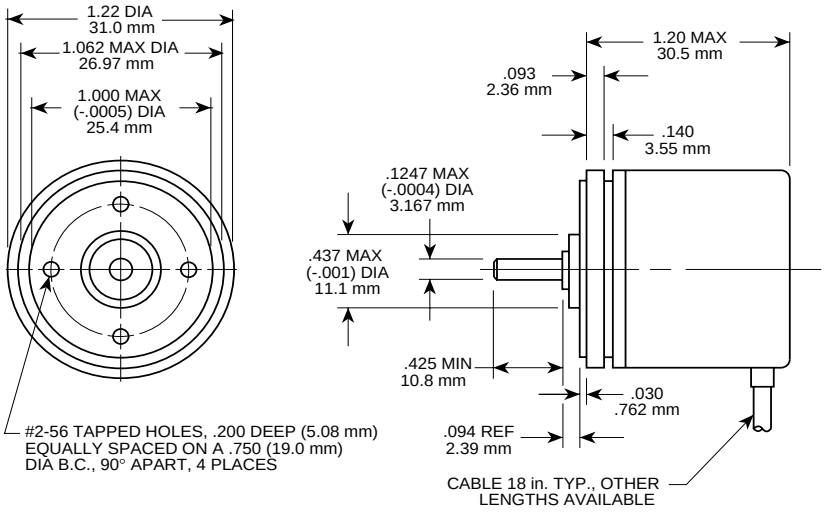
Mechanical Bearing Life: 16 x 10^{6} revolutions at max. load
Shaft Loading: 1 lb. radial,1 lb.axial max.
Shaft Speed: 5,000 RPM max.
Starting Torque
Shielded Bearing: 0.1 oz-in max. at 25°C
Sealed Bearing: 0.3 oz-in max.at 25°C
Running Torque
Shielded Bearing: 0.08 oz-in max.at 25°C
Sealed Bearing: 0.2 oz-in max. at 25°C
Moment of Inertia 1.13 x 10^{-5} oz –in –sec^{2}
Weight: 3.0 oz.max.

ENVIRONMENTAL

Operating Temperature0 to +70 °C
Storage Temperature –25 to +70 °C
Humidity: to 98% without condensation
Enclosure Rating: NEMA12/IP54 (dirt tight, splashproof) Optional: NEMA 3/IP64 rating available (consult factory)

Series E12

Approximate Dimensions (inches/mm)



Ordering Information

To order, complete the model number with code numbers from the table below:

Code 1: Model	Code 2: Pulses/Rev	Code 3: Mechanical	Code 4: Output	Code 5: Voltage	Code 6: Termination
E12	☐☐☐☐	☐	☐	☐	☐
E12 Size 12, Light Duty Enclosed	**0100** **0250** **0256** **0360** **0500** **0600** **1000** **1024**	**0** Sealed Bearing **1** Shielded Bearing	**0** Unidirectional **2** Bidirectional, no Index **3** Bidirectional, with Index	**0** 5 VDC **1** 12 VDC **2** 15 VDC	**0** 18" Cable **1** 3' Cable **2** 6' Cable **3** 10' Cable **4** 15' Cable